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**Note :** Attempt all the twenty questions. Each question carries 2 marks. Answer should not exceed 15 words.

**नोट :** समस्त २० प्रश्नों के उत्तर दीजिये। प्रत्येक प्रश्न के लिये २ अंक निर्धारित हैं। उत्तर १५ शब्दों से अधिक नहीं होना चाहिये।

- 1 Give full form of following :  
निम्नलिखित की फुल फॉर्म दीजिए :  
RISC  
CISC

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- 2 What are main disadvantages of relative addressing ?  
रिलेटिव एड्रेसिंग की मुख्य कमियाँ क्या है ?

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- 3 What is differences between Virtual and Physical address ?  
आभासी एवं भौतिक एड्रेस में अन्तर स्पष्ट कीजिए।

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4 What is the operation performed by RRC in 8085 microprocessor ?  
8085 माइक्रो प्रोसेसर में RRC के द्वारा क्या क्रिया की जाती है ?

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5 Why do we need DMA ?  
DMA की हमें क्यों आवश्यकता है ?

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6 What is the function of accumulator CPU register ?  
एक्यूमुलेटर सीपीयू रजिस्टर के कार्य क्या है ?

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7 What is use of cache ?  
कैश का उपयोग क्या है ?

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8 How is pipeline processing useful ?  
पाइपलाइन प्रोसेसिंग कैसे उपयोगी है ?

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9 What are the basic tasks in business data processing ?  
बिजनेस डाटा प्रोसेसिंग में मुख्य कार्य क्या है ?

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10 What is index sequential file ?

इन्डेक्स सिक्वेन्शियल फाइल क्या है ?

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11 What do you understand by weak entity set ?

कमजोर एन्टिटी सेट से आप क्या समझते हो ?

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12 What does the following expression mean

$$\sigma_{X=A}(T)$$

नीचे लिखे (एक्सप्रेसन) कथन से क्या मतलब है ?

$$\sigma_{X=A}(T)$$

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13 What is referential integrity ?  
रेफरेंशियल इन्टीग्रिटी क्या होती है ?

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14 Write the expansion of QBE. Where do we need it ?  
QBE का विस्तार लिखें। इसकी जरूरत कहाँ पर पड़ती है ?

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15 Why do we normalize a data base ?  
डाटा बेस को क्यों नार्मलाइज़ किया जाता है ?

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16 What is interpolation ?

Interpolation से क्या तात्पर्य है ?

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17 What is scalar matrix ? Draw a  $3 \times 3$  scalar matrix.

अदिश मैट्रिक्स क्या है ?  $3 \times 3$  का अदिश मैट्रिक्स बनाइये।

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18 What do you mean by relative error ?

रिलेटिव एरर का क्या तात्पर्य है ?

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19 What value remain on the stack after following sequence of instructions ?

निम्नलिखित इन्स्ट्रक्शन के क्रम के पश्चात् स्टैक में क्या मान बचेगा ?

PUSH # 4

PUSH # 7

PUSH # 8

ADD

PUSH # 10

SUB

MUL

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20 Give the Range of n-bit fixed point numbers.

n-बिट फिक्सड पाइन्ट संख्या (पूर्ण संख्या) की रेंज (फैलाव) दीजिये।

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**PART – B / भाग-ब**

**Marks / अंक : 60**

**Note :** Attempt all the **twelve** questions. Each question carries 5 marks. Answer should not exceed 50 words.

**नोट :** समस्त 12 प्रश्नों के उत्तर दीजिये। प्रत्येक प्रश्न के 5 अंक निर्धारित हैं। उत्तर 50 शब्दों के अधिक नहीं होना चाहिए।

**21** List instruction addressing modes:

इन्स्ट्रक्शन एड्रेसिंग के प्रकारों को बताइये।

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**22** Explain working of Latch briefly.

Latch की कार्यविधि संक्षेप में समझाइये।

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23 Differentiate between hardwired control and micro programmed control.

हार्डवायर्ड कंट्रोल एवं माइक्रो प्रोग्राम्ड कंट्रोल में अन्तर स्पष्ट कीजिए।

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24 Explain in brief the 'handshaking transfer'.

'हैंडशेकिंग ट्रांसफर' की संक्षिप्त में व्याख्या करें।

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25 Write advantages and disadvantages of Associative memory.

Associative मेमोरी की लाभ एवं हानियाँ लिखें।

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26 List functions of data base administrator.

डाटा बेस एडमिनिस्ट्रेटर के कार्य लिखिए।

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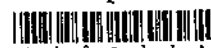
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27 Explain the characteristics of business information.

व्यापारिक सूचना के गुणों को समझाइये।

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28 What do you mean by inverted file organisation ?

इन्वर्टेड फाईल आर्गनाइजेशन से आपका क्या तात्पर्य है ?

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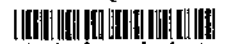
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29 Construct a table of forward differences for given data :

दिये गये डाटा के लिए फारवार्ड डिफरेंसेस की सारणी बनाइये :

$x :$	10	20	30	40
$y :$	1.0	2.0	4.4	7.9

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30 What do you mean by the symbols  $\Delta, \Delta^2$  ?

$\Delta, \Delta^2$  चिन्हों से आपका क्या तात्पर्य है ?

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31 Find the value of  $\int_2^4 \frac{dx}{x}$  using Simpson's  $\frac{1}{3}$  Rule,  $h=0.5$ .

सिम्पसन  $\frac{1}{3}$  रूल विधि से  $\int_2^4 \frac{dx}{x}$  का मान ज्ञात करे,  $h=0.5$ .

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32 Write the Lagrange's Formula for interpolation, for unequal intervals.

असमान अन्तर के लिए लेगरांज इन्टरपोलेशन फारमूला लिखिए।

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34 Consider the following reference string :

माना कि निम्नलिखित रेफरेन्स पंक्ति है :

2 3 2 1 5 2 4 5 3 2 5 2

If paging system has capacity of three pages then compare several page replacement policies.

यदि पेजिंग सिस्टम की क्षमता तीन पेज हो तो विभिन्न पेज रिप्लेसमेंट पोलिसियों की तुलना कीजिए।

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35 (a) Draw the ER Diagram for the following database :

निम्नलिखित डाटा बेस का ER Diagram बनायें :

Teacher (T\_id, T\_name, C\_id)

Class (C\_id, T\_id, Stream, Room\_No, Subject)

Student (S\_id, C\_id, Sex, Year\_of\_Add)

A teacher is given more than one class and a class can have more than 10 students. T\_id, C\_id, S\_id are teacher, class and student identification numbers, Year\_of\_Add is year of admission.

एक Teacher को एक से ज्यादा Class पढ़ाने को दी जाती है और एक Class में 10 से ज्यादा बच्चे हो सकते हैं। T\_id, C\_id, S\_id अध्यापक, क्लास और विद्यार्थी के पहचान क्रमांक है। Year\_of\_Add प्रवेश वर्ष है।

(b) In SQL write the solution to the following :

SQL में निम्नलिखित का हल लिखें :

(i) Using subquery / सबक्वेरी का इस्तेमाल करें :

Write the names of the teachers teaching the subject Computer Science to science classes.

उन सब अध्यापकों का नाम लिखें जो कि कम्प्यूटर साईंस विषय उन बच्चों को पढ़ाते हैं जिन्होंने साईंस ली हुई है।

(ii) Write the S\_id, C\_id of the students whose year of admission is 2012.

उन सब विद्यार्थियों का S\_id और C\_id लिखें जिनका प्रवेश वर्ष 2012 है।



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Lined writing area with 25 horizontal lines.

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ntd...

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37 In a partially destroyed records of an analysis of correlation data, the following results only are legible :

परस्पर सम्बन्धी डाटा के विश्लेषण के आंशिक नष्ट रिकॉर्ड में निम्नलिखित मान स्पष्ट है :  
Variance of  $x$  is 9, Regression equations :

$$8x - 10y + 66 = 0 \text{ and } 40x - 18y = 214$$

$x$  का वैरियेन्स 9 है, रिग्रेशन समीकरण :

$$8x - 10y + 66 = 0 \text{ एवं } 40x - 18y = 214$$

Then find : ज्ञात कीजिए :

- (a) The mean value of  $x$  and  $y$ .  
 $x$  एवं  $y$  की मीन वैल्यू।
- (b) The standard deviation of  $y$ .  
 $y$  का स्टैण्डर्ड डेवियेशन।
- (c) The coefficient of correlation between  $x$  and  $y$ .  
 $x$  एवं  $y$  के मध्य का परस्पर सम्बन्धी गुणक।



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38 (a) Solve using Gauss-Elimination method :

गास एलिमिनेशन विधि से हल करें :

$$2x + y + 4z = 12$$

$$8x - 3y + 2z = 27$$

$$4x + 11y - z = -3$$

(b) Explain False position method.

फाल्स पोजीशन विधि को समझाइये।

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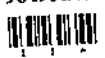
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SPACE FOR ROUGH WORK / रफ कार्य के लिए जगह

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